

**INCREASING THE LEVEL OF CUSTOMER SERVICE IN FIRE
INVESTIGATIONS**

EXECUTIVE LEADERSHIP

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ABSTRACT

The Phoenix Fire Department has recently embraced customer service as a core value. In many cases, long-held fire service structures and practices do not support the strategy of quality customer service. One division in which the structures and practices need to be examined and adjusted to support the highest level of customer service is Fire Investigations.

This research examined the successful structures and practices of fire investigation units in metropolitan fire departments. Interviews provided the qualitative format for gathering information. Descriptive research methods were used to answer the following questions:

1. How do other metropolitan fire departments select and train fire investigators, and how do they structure fire investigation units?
2. How should the selection process for fire investigator be designed?
3. What is the ideal organizational structure and staffing to support the highest level of service to both the internal and external customers by fire investigators?
4. What are the options to provide initial and continuing education and training to meet national standards for fire investigators?

Due to the qualitative approach necessary to identify and comprehend successful practices, telephone interviews were used to gather information. The length of the interviews varied with the willingness of the investigation managers to spend time describing successful fire investigation structures and practices.

Results indicated there are multiple structures and practices for delivering fire investigation services. Successful fire investigation practices involve knowledge, skills and abilities in arenas of both fire and police service.

Recommendations included a pilot program of a task force combining fire and police for a team response. The practice of selecting fire investigators should be based on a job analysis, designed to measure the specific knowledge skills and abilities required for quality fire investigations. Several options for providing a training format and raising competencies to national standards were discussed.

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INTRODUCTION

Customer service has recently become a strategic priority of the fire service, especially for the Phoenix Fire Department. Fire Chief Alan Brunacini raised customer service accountability issues for the fire service by writing Essentials of Fire Department Customer Service, (1996). In this publication, Brunacini elaborated on several world-class examples of enlightened customer service delivered by firefighting crews. Captain Patrick Cantelme, the immediate past president of United Phoenix Firefighters Local #493 expressed labor's perspective as the obligation to deliver the highest level of service to the customer in his Customer Service Guide (1995). This common goal shared by both management and labor demonstrates the core value of providing the highest level of service to the customer. "But clarity about core values requires leaders to articulate those values, reinforce them in word and deed, and hold others accountable for running their parts of the business consistent with those values" (LeFauve, p 33).

Responsibilities of fire investigators directly involve accountability to quality customer service. This accountability requires changes in the Fire Investigations Section. For example, the Phoenix Fire Department has, over the past ten years, used seniority as a single criterion to select fire captains for fire investigator positions. However, seniority does not assure that the candidate has the necessary knowledge, skills and abilities to deliver quality customer service as a fire investigator. In 1997, a change was made in the management procedure for the selection of members for staff positions, including fire investigators. The new procedure allows the section head to "require resumes, conduct formal interviews, conduct skills/aptitude assessments and review past performance

applicable to the position” (Volume 1, M.P. 104.02 page 6 of 13). However, the selection process for fire investigator has yet to be restructured.

It is commonly believed that the lack of initial and continuing training of fire investigators in Phoenix is an obstacle to quality customer service. At this time, the Investigation Section does not train to a standard, require fire investigators to obtain certification or another type of evaluation process in the area of fire cause and origin. The only training currently required is that of Specialty Peace Officer.

Currently, fire investigators in Phoenix have police powers, but do not routinely work within a task force structure for fire investigations. Commonly, a single investigator representing the fire department will be responsible to determine fire cause and origin, interview witnesses, document findings, and estimate losses without any mandatory training in these areas.

The purpose of this paper is to identify successful processes for selection and training of fire investigators as well as successful organizational structures of fire investigation units in medium to large fire departments in the United States. The most successful of these processes (as described by the fire investigation managers) will become the foundation for recommendations in order to improve the level of service to the customer. “If your mission is customer-focused, you’ll seldom go wrong” (LeFauve, p 32).

This qualitative research was based on interviews, which provided the opportunity to identify and more clearly define successful practices used by other departments. Descriptive research methods were used to answer the following questions:

1. How do other major metropolitan fire departments select and train fire investigators, and how do they structure fire investigation units?
2. How should the selection process for fire investigator be designed?
3. What is the ideal organizational structure and staffing to support the highest level of service to both the internal and external customers by fire investigators?
4. What are the options to provide initial and continuing education and training to meet national standards for fire investigators?

BACKGROUND AND SIGNIFICANCE

Costs of Fire and Arson

Fire continues to be the most costly public safety problem in the United States today, as it has been for the past several decades. The losses in human lives and injuries due to fire are exceeded only by those due to traffic accidents. Fire-caused property losses are far in excess of those caused by all classes of crime, and rival those produced by hurricanes and earthquakes (DeHaan, p.1). In 1994, direct losses due to structure fires in the U.S. were almost \$7 billion. According to the National Fire Data Center,

Of all the industrialized Western nations for which data are available, the United States ranked behind only Hungary as having the highest per capita fire death rate. The United States' fire death rate was more than five times that of Switzerland (p.19).

One of the explanations given for this high rate of death is “The United States commits fewer resources both in terms of dollars and staff time to fire prevention activities that other industrialized countries” (p.19).

When considering the causes of fire in the United States, arson deserves considerable attention as it ranks at or near the top in several categories, according to the National Fire Data Center. “The leading cause of nonresidential fires is arson. Arson has been the leading cause of nonresidential fire deaths eight out of the last ten years” (p. 7). Arson is also the leading cause of fire injuries (p. 7). Arson also ranks in the top three causes of fires in residents, along with cooking and heating (National Fire Data Center, p.6).

Arson has been identified and quantified as the fastest growing crime in America today. The rate of arson has increased well over 300% during the past ten years. National statistics show that, when measured on a cost-per-incident basis, arson is the most expensive crime committed. The average loss per incident is about ten times that for robbery (O’Connor, p. 1).

In terms of human suffering, in 1986, over 1000 people died and 10,000 were injured or badly disfigured as a result of arson in the United States (O’Connor, p. xiii). “Arson has been the second leading cause of fire deaths since 1986” (National Fire Data Center, p. 2). “Next to war, arson is humanity’s costliest act of violence” (Micheels, p. xv).

Arson represents a considerable dollar loss to the citizens of Phoenix Arizona. In 1998, loss directly attributable to arson was \$12,814,720 (Fire Investigation Annual Report, 1998). This figure does not include fires of suspicious or undetermined origin.

According to David M. Smith, an internationally recognized expert, author and consultant on arson, at least half of the annual dollar loss in the United States from fire of undetermined origin is due to arson (telephone interview, 7-21-99). Applying this information to the 12.8 million-dollar loss raises the figure to \$15,413,639 of direct arson loss in Phoenix during 1998 (Fire Investigation Annual Report, 1998). The 15.5 million-dollar loss also does not include the indirect losses caused by arson fires, including loss of business, reduced tax base, relocation costs, unemployment and reduced property values. In order to estimate the total loss due to arson fires in Phoenix for 1998, one would have to multiply the 15.5 million-dollar figure times ten (DeHaan, p. 2), (Inciardi, p.77). The staggering figure of 154 million-dollar loss to the Phoenix community, in 1998, places the arson problem in perspective.

Fire Service Response

The chief of the fire department has the primary responsibility, both legally and morally, for seeing that every fire has a proper fire cause determination investigation completed...The fire chief must give fire cause determination as high a priority as fire suppression (IFSTA, Introduction to Fire Origin and Cause, p.7).

A critical component of providing a “proper fire cause determination investigation” is providing well-qualified and trained fire investigators. Because, “In virtually all situations, it is the quality of an investigation that determines whether or not the cause of a fire will be discovered” (Phillipps and McFadden, p.vii)

“The response to the problem of arson, when examined nationally, has been, at best, haphazard. Few cases lead to arrests, and less than 20% of arrests end in

conviction” (O’Connor, p.1). This is primarily due to understaffed, inadequately financed and under-trained investigative units. As a result, perhaps half of the yearly fires are misclassified and insurance companies inappropriately pay millions of dollars” (O’Connor, p.2). In terms of human suffering, in 1986, over 1000 people died and 10,000 were injured or badly disfigured as a result of arson in the United States (O’Connor, p. xiii).

Local Approach

The Phoenix Fire Department has relied upon seniority to select fire captains for fire investigator positions since the mid 1980s. Ironically, prior to the mid 1980s, there was a written test for the position of fire investigator, allowing firefighters, engineers and captains to compete for positions. However, in 1997, the selection process of recruiting for staff positions, including fire investigators evolved, permitting a more structured process. The new procedure allows the division manager to “require resumes, conduct formal interviews, conduct skills/aptitude assessments and review past performance applicable to the position” (Volume 1, Standard Operating Procedures, Phoenix Fire Department, M.P. 104.02 page 6 of 13). Since that time, no investigators have been selected and no formal selection process has been designed or implemented.

Additionally, there is no formal training or educational program for initial or continuing training of investigators in the critical areas of fire cause and origin, report writing, interviewing and interrogation. Courses in fire investigations are available but are not a mandatory requirement for the job. The only mandatory training or qualification required of fire investigators is that they qualify at the shooting range on an annual basis and attend minimal peace officer proficiency and continuing education..

Prerequisite Knowledge and Skills

Fire investigator positions require knowledge, skills and abilities for successful completion of duties, which are not required of a fire captain working in Operations.

The art of determining the cause of a fire and of capturing the person(s) responsible is complicated by the fact that the crime of arson actually encompasses several other crimes (murder, assault, criminal mischief, fraud, extortion, coercion, etc.)...The job of the fire/arson investigator is multifaceted and requires a sound working knowledge of such areas as building construction, chemistry (the nature of fuels), physics (behavior of fire), electricity (as a heat source), the law, motives, the human body's reaction to fire, and psychological disorders that are believed to be associated with fire-setting behavior (O'Connor, p. xi).

The NFPA 1033, Professional Qualifications for Fire Investigator, 1993 Edition specifies over one hundred specific skills and areas of knowledge that constitute the minimum standards required for service as a fire investigator. These prerequisite skills and areas of knowledge are grouped into the following categories:

- Scene Examination.
- Scene Documentation.
- Evidence Collection/Preservation.
- Interview/Interrogation.
- Post-Incident Investigation.
- Presentations.

In the course, Executive Leadership (National Fire Academy, Executive Fire Officer Program, 3-21-99 through 4-2-99) Dr. Larry Ritcey projected a slide that read

“Structure follows strategy”. The point that Dr. Ritcey made was that the structural processes must be designed with the strategy of the organization in mind. Four of the principle strategies of Essentials of Fire Department Customer Service (Brunacini, p. iii, iv) can be applied in analyzing the structure, selection and training practices being considered:

- Our essential and number one priority is to deliver the best possible service to our customers.
- Always attempt to execute a standard problem-solving outcome: quick/effective/skillful/safe/caring/managed.
- Basic organizational behavior must become customer centered.
- We must continually improve our customer service performance.

Frequently leaders adjust strategy and more rarely examine the structures already in place to determine if they support the newly adopted strategy. On 3-23-99, Dr. Ritcey projected another slide with the following quote:

Individually committed and capable people require effective organizational structures and policies to produce collective results. All too often, the structures and policies are not clearly and judiciously thought out. Competing structures and contradictory policies combine to frustrate personal energy and commitment.

This appears to be the case regarding the structure, selection and the training of fire investigators and the policy of providing the highest level of customer service. For example, scores of members have vented their frustration (to this author) with the seniority method of selection. One past manager of the Fire Investigation Section admitted a preference for using the single criterion of seniority because it was easy.

Labor organizations tend to favor seniority and management does not have to create or manage a testing process. This method of selection appears to be flawed for the following reasons:

- Members with the most seniority are frequently approaching their last years prior to retirement and find their level of energy waning. As was previously noted by investigation experts, a high level of initiative and a strong work ethic are required to successfully investigate fires. Lack of supervision offers ample opportunity to overlook a more thorough investigation by declaring the fire to be of undetermined origin.
- The seniority method of selection does nothing to insure the members have the knowledge, skills and abilities to be successful even after the required training.
- Members with the necessary level of seniority frequently retire in a few years, giving the Department and the citizens a relatively short return on the level of investment in terms of training of those members.

Based on this author's twenty year's of experience and observation, it does not appear that selecting members for fire investigations by seniority supports delivering the "best possible service to our customers." It seems that an assessment of skills, knowledge and abilities related to fire investigations would select fire investigators better prepared to deliver a higher level of service to their customers.

LITERATURE REVIEW

Task Force Concept

Fireground investigation requires that a wide range of knowledge be applied to a variety of tasks in a difficult situation. The job may be too much for one investigator to do effectively, especially at a major fire. For this reason, where department budgets have allowed, fire investigation teams consisting of two or more members have been established. For best results, an investigation team should consist of at least one fire officer, an experienced firefighter, and a police officer. The team should respond to fires as a unit. Firefighter members can concentrate on the fireground while police members question occupants and witnesses. This approach minimizes delays in the questioning process, increasing the accuracy of verbal information obtained. It also allows team members to perform the tasks they know best while providing enough personnel to do the job effectively...Including a police investigator on the team has several advantages. Police are trained investigators; they know how to question witnesses, know the law, have arrest powers, and can solicit the help of other police officers or law enforcement agencies with a minimum of delay (Phillipps and McFadden, p. 8).

At the fire scene, it is frequently difficult for a single investigator to identify and interview the appropriate parties for a variety of reasons. The number of fire victims and their emotional state complicate the initial physical investigation. Additionally, the investigator needs to interview witnesses, bystanders and firefighters.

People whose statements or responses may bear directly on the investigation should be interviewed before they leave the fireground. Once they have left, they

may be difficult to locate. Moreover, some people will talk freely at the fire scene but become reticent when the excitement is over. Others may tend to forget or exaggerate details, even a short time after the fire. The sooner the occupants and witnesses are interviewed, the better the chance of obtaining clear accurate statements (Phillipps and McFadden, p. 238).

Safety is another reason that a single investigator should not perform investigations. According to NFPA 921, "Fire scenes by their nature are dangerous places. Fire scene examinations should not be undertaken alone. A minimum of two individuals should be present to ensure that assistance is at hand if an investigator should become trapped or injured" (pp. 921-70, 71). The Phoenix Police Department recently hired seventy-seven officers in order that all officers on second shift patrol in pairs for safety (Telephone interview, Officer Neville, 7-31-99). By far the majority of arson crimes take place under the cover of darkness and Phoenix Fire Investigators deserve the same level safety consideration that Phoenix Police Officers enjoy.

Another safety consideration that would be addressed by additional fire investigators is the safety of the internal customer, the firefighter. The National Fire Protection Agency reports that in 1997, one hundred thirty two firefighters died due to arson (NFPA Statistical Fact Sheet, 1997). The last safety issue to be brought up at this point is the safety of the external customer. NFPA reports that in 1997, four hundred forty five civilians died in the United States directly due to proven arson. Adequately addressing the arson problem helps the fire service protect its own as well as its external customers.

A model arson task force could incorporate the intelligence gathering networks of each separate investigative agency into one cohesive, coordinated, and goal-directed entity. This would provide for a more comprehensive attack upon a selected number of subjects and avoid unnecessary duplication of effort. It would also utilize assigned personnel and available resources more efficiently. This sharing of investigative specialties (fire, police, etc.) and experience in a spirit of free-flowing communication would broaden the investigative capabilities of each investigator (O'Connor, p. 4).

Arson task forces have proven effective across the nation through aggressive detection and prosecution of arsonists. This increases the level of service to the line firefighting crews by reducing not only the number of large structure fires, but also the number of nuisance fires in alleys, dumpsters and fields. This reduction in call volume keeps fire crews available to respond and ready to deliver quality service to other customers requiring emergency assistance.

Undetected and Underreported Arson

Experts disagree as to the percentage of fires in the U.S. that are started intentionally each year. The FBI (p.56) and NFPA report only the fires that have been proven to be arson. Their figures do not include fires of suspicious or undetermined origin. The FBI gathers its information from fire agencies that represent 67% of the population and it does not report what percentage of structure fires are arson. The National Fire Protection Association (NFPA) estimates that only 78,500 out of 552,000 structure fires in 1997 (14.2%) are arson fires (Karter, p. iii). DeHaan argues that this figure is conservative, "since many fires are never properly investigated due to lack of

time or are misidentified inadvertently as accidental fire due to lack of experience or intentionally to avoid the complications that arise from identifying a fire as a criminal act” (pp. 2-3). “It is the opinion of this author that as many as 40% of all urban structure fires in the United States today are incendiary in origin, that is, intentionally started” (DeHaan, p.3). When insufficient manpower and resources are given to investigating fires and training investigators (as is reportedly the situation in the majority of cases), arson losses are chronically underreported. Arson is the only property crime requiring time, effort and resources to establish that a crime, in fact, happened.

Arson for profit is responsible for approximately half of all the fire related property damage in America. It is probably the primary motive for the 25% yearly increase in the rate of arson. The business of arson for profit has traditionally been one of high economic gain and low risk. Nationally, only 9% of all (reported) arson cases are cleared by arrest, and only 2% result in convictions. As for the risk, an arsonist in America has less than one chance in ten of being arrested, and an even smaller chance of being convicted (O’Connor, pp. 10-11).

Arson is totally underreported. And there are a number of reasons for that. The operating force—via ignorance because they don’t have the training to detect the arson—is one of the reasons. The others are apathy and empathy. There are people out in the field who say who really gives a shit? Nothing is going to be done about this. So, why bother reporting it? There are other people out there, maybe even the same individuals, who say the fire marshals are working too hard already. So, why give them this case? Let’s just forget about it...In other

jurisdictions, fire investigations is a stepchild. Fire departments want it, but they do not want to spend the time, energy and money to do it the right way...They will ask themselves, "Can we solve this case? No, we can't solve it. Then it is not arson; it is a fire of undetermined origin. When we can solve it, it's an arson" Micheels, pp. 225-226).

When you go to other cities and they tell you that they don't have an arson problem, 99 percent of the time it means only one thing: Fire investigation is not being done. It only becomes a problem when you investigate it; but if you don't address it, it doesn't go away, it just gets worse (Micheels, p. 188).

Some (fire departments), however, still do not conduct proper investigations for various reasons. The department may have inadequate training programs that result in improper fireground operations. A proper fireground investigation may not be done simply because personnel are cold, wet, hungry, or tired (Phillipps and McFadden, p. 4).

Training and Evaluation

"Training agencies or authorities shall establish programs that prepare individuals to meet the requirements defined in this standard" (NFPA 1033, p. 5). Recently, the fire investigators in Phoenix Fire have instituted a three-hour monthly meeting for training and exchange of information. These meetings are not designed to bring the investigators up to the national standard, but they are a step in the right direction.

If the hiring manager has not made a mistake in selection, only three basic reasons remain for why a person does not do his or her job.

1. The individual does not know what the job is.

2. The individual does not know how to do the job.
3. Someone or something interferes with his or her desire or ability to do the job

(Brown, p. 129).

“Evaluation of job performance requirements shall be by individuals approved by the authority having jurisdiction. The evaluator shall be qualified to conduct the evaluation of an investigator” (NFPA 1033, p. 5). Currently, there is no evaluator of fire investigators in the Phoenix Fire Department who is familiar enough with the process to be qualified to evaluate job performance.

The need for training of fire investigators has not been given top priority in many fire departments. “Incidentally, who is responsible for making sure the employee is properly trained for his new job? That is management’s responsibility” (Aguayo, p. 65). It seems that fire investigation managers forget that “All new people are incompetent” (Brown, p. 130).

Unfortunately, many of us in management ignore our training obligation.

This occurs for four essential reasons:

1. We assume that people possess the skills when they join us. We take their ability to perform for granted.
2. No one trained the manager; therefore he doesn’t see the need for training.
3. We don’t understand what is required to modify behavior and develop skills.
4. Managers feel that the responsibility for training lies with the training department

(Brown, pp. 135-136).

Most problems in fire investigation sections are due to insufficient training and support; these are problems with the system. W. Edwards Demming, father of the global quality movement proposed that:

When the system is the major cause of problems, as it happens most often, only action on the system can make real improvements. Only management is in a position to work on the system. That is its responsibility. Quality is made in the boardroom (Aguayo, pp. 102-103).

“Training for many new investigators will consist only of on-the-job training combined with individual study. It can be extremely difficult for a new investigator, working alone, to learn by trial and error” (Phillipps and McFadden, p. 6). “New employees left to their own devices experience a lot of unnecessary stress in becoming part of the new environment. They feel like orphans” (Brown, p. 133). Without substantial training, the new investigator is set up to fail. “Without past experience to rely on, he has no point of reference for decision making. Consequently, the odds are least fifty-fifty that any decisions he makes will seem poor ones” (Brown, pp. 132-133).

“As firefighters they already have the knowledge of what fires do, but they need guidance on how to conduct investigations by asking the right questions, and putting down everything people tell them in an articulate form” (Micheels, p. 172).

Selection Process, Time for Change

In New York City, fire investigators have been selected based on a resume and an interview. The factors being considered in the selection are the applicants’ level of education and whether they have police experience (Micheels, p. 191).

The practices that have served the fire service well in the past may not be functional in the future.

The modern fire service organization is confronted with a much more complex management environment today. Administrators must be aware of their legal and ethical responsibilities associated with the selection of personnel. Ignorance of the law is no excuse, and many organizations have discovered that fact. The modern selection systems for the fire service must be related to the local job circumstances. The selection procedure must be formatted according to a job analysis if it is to have any chance of successfully surviving a court challenge (Arwood, p. 43).

Dick Arwood describes the process of creating a job analysis with the following steps:

1. Write the job description, define the job purpose and the primary duties associated with the job.
2. List every task, which can be identified which is performed in the job.
3. Identify the level of frequency and/or importance of each task.
4. Identify those tasks with high frequency or importance.
5. Retain all documentation related to the job analysis (p. 29).

Merit--making decisions based on the best interests of the organization--was Hanover's antidote to "decision-making based on bureaucratic politics, where the name of the game is getting ahead by making an impression, or, if you're already at the top, staying there" (Senge, p.182).

While some members of labor and management seem opposed to change, it is occasionally in the best interest of the customer to take a fresh look at how we do business. Frances Hesselbein, Editor-in-Chief of Leader to Leader, writes of the need to challenge the status quo. “Challenging the gospel of ‘the way we’ve always done it’ by questioning every policy, practice, procedure, and assumption, abandoning those that have little use today or will in the future—and keeping only those that reflect the desired future” (p.7).

Change has become so rapid, unpredictable and pervasive that the systems, structures, policies and behaviors of the past are failing us today. The pace of change requires us to re-think how we live, how we work, how we learn and how we grow. We must take the time to examine what has worked, what needs change, what needs to be abandoned (Hunt, p.11).

Change, our ability to identify the need for it and to adapt to it organizationally and individually, is key to our continued success. Not all changes work out, but if we are afraid, or unwilling to try new ideas, our organization will diminish over time (PFD Way, p. 37). Yet how many of us have ever found that it is difficult for organizations to abandon what isn’t working? To stop doing something that has been done for years? Building a culture in which people can express their views (of the need for change) without fear of reprisal is a huge challenge for most organizations (Senge, 1998, p. 20).

To quote one of the founding fathers of this country, Thomas Jefferson,

I am not an advocate for frequent changes in laws and constitutions. But laws and institutions must go hand in hand with the progress of the human mind. As that

becomes more enlightened, as new discoveries are made, new truths discovered and manners and opinions change, with the change of circumstances, institutions must advance also to keep pace with the times. We might as well require a man to wear still the coat which fitted him when a boy as civilized society to remain ever under the regimen of their barbarous ancestors (Jefferson Memorial, Washington DC).

PROCEDURES

Definition of terms

Arson is the intentional setting of a fire with intent to damage or defraud.

Incendiary fire is a deliberately set fire.

Suspicious fire is a situation when fire cause has not been determined, but there are indications that the fire was deliberately set and all accidental fire causes have been eliminated.

Research Methodology

The desired outcome of this research was to identify successful practices by fire investigations units of medium to large fire departments in the United States.

Specifically, desired outcomes included, identifying ideal organizational structure for arson units, identifying successful selection processes for investigators and, determination of initial and continuing training methods and opportunities.

Literature Review

During the Executive Development course at the National Fire Academy, this author took the opportunity to make use of the Learning Resource Center for researching the topic of this paper. The Central Library of Phoenix provided several other sources of information that were helpful, in addition to arranging an interlibrary loan with the

National Emergency Training Center's Learning Resource Center. This author's personal library was the source for additional materials. The library of the Fire Investigation unit and the Phoenix Fire Department library were also utilized. Several searches of the Internet were moderately successful in obtaining information. Lastly, the help of friends, colleagues, associates and strangers, with knowledge or experience of fire investigations was solicited.

Instrumentation

Due to the qualitative nature of this research, interviews were used to provide the opportunity for in depth dialogue and conversation. Follow-up questions were required to gather greater detail. Telephone interviews and fax transmissions were selected as the methods of data collection due to the cost-effective nature and the ability to establish relationships with fire investigation managers. It is this author's opinion that fire service members are more anxious to provide information to a stranger after a certain amount of rapport is established. Most of the managers interviewed were extremely open and helpful after rapport was established. In a few cases, the managers seemed preoccupied with excessive caseloads and were uncomfortable spending the necessary time on this project.

The fire investigation managers were not asked a series of identical questions, but were engaged in dialogue concerning successful techniques, structure and procedures proven to enhance customer service. Information sometimes came in the form of lessons learned and advice on how not to structure, select or train fire investigators, based on their experience.

Fire departments were initially selected based on previous research completed by a colleague, Dana Patrick. The surveys she sent out identified managers who had successful investigation programs and were willing to share information. Additionally, they had given her their work phone numbers, which facilitated contact. After information was collected from twenty fire departments in this manner, ten other departments were contacted in the western United States for additional information. The thought behind selecting fire departments in western states was that they might have similar cultures to the Phoenix Fire Department. The amount of information given by each department varied from three pages to less than two lines, depending on the willingness of the manager.

Assumptions and Limitations

It was assumed that fire investigation managers would be honest in their conversation and responses. When concerned about confidentiality or the sensitive nature of the information being shared, they were assured that their names would not be used.

It was assumed that recommendations resulting from this research would be considered for implementation in the Phoenix Fire Department, depending on budgetary feasibility and concerns. It was assumed that Labor and Management would come to agreement on the value of improvement in the structure, training and selection processes for fire investigators.

Time limited this research. More time would have provided additional opportunities to contact more fire investigation managers to benchmark their successful procedures and practices.

RESULTS

Answers to Research Questions

Research Question 1. How do other metropolitan fire departments select and train fire investigators and how do they structure fire investigation units?

Structure

Most of the departments contacted require their fire investigators to be certified peace officers. This is accomplished by sending the candidates through the local police academy. Usually, fire investigators must complete an extensive background check, a psychological examination, a physical agility test and an interview by the police agency prior to being accepted. This gives the investigator access to police computers, powers of arrest, the ability to carry a deadly weapon etc. Most investigation managers believed this is a beneficial requirement. Most managers of units without police powers desired officer certification.

One notable exception was the Baltimore City Fire Department (BCFD). Their investigators do not have police powers, but they work on a task force with police officers. BCFD has five police officers and a lieutenant assigned to fire investigations in addition to nine field investigators (fire captains) and an administrative investigator.

When dispatched to a fire, an investigator responds with a police officer. The investigator handles the cause and origin, while the police officer takes care of interviews, interrogation, computer tracking, fingerprinting, arrest etc. They compile their work into a preliminary report the same day and a complete report within fifteen days. While BCFD is contemplating police certification for their investigators, the manager stated that “not having police powers takes a big burden off of the

investigators”. He also stated that fire investigation doesn’t fit neatly into the fire or police arena and that successful management of the responsibility requires considerable support from the top of both departments.

The Philadelphia fire investigation manager also recommended a task force concept since fire and police skills are both required in order to successfully investigate and prosecute incendiary fires. The team approach model provides both areas of expertise serving the best interest of the customer. Both benefit from this model with the police handling investigation details and firefighter determining fire cause and origin. He also recommended that fire investigators in a task force have police powers. The Seattle Fire Investigation unit has police powers as well as a modified task force. Instead of a police officer responding with the investigator to every fire, there is a police sergeant and a detective assigned to the unit. The sergeant monitors paperwork for quality control and the detective mentors the investigators in interrogation and interview techniques in the field.

Additional points of interest about structuring a fire investigation unit for the highest level of customer service included suggestions from the Boston Fire Investigation manager. Chief Rice stated that they have had a long bitter battle with arsonists in his city. As a result, a district attorney has been assigned to the fire investigation unit. The district attorney is available twenty-four hours a day by pager and routinely responds to the scene of incendiary fires during the early stages of investigation. His role is to insure that technical and legal mistakes are not made in the process of investigation. Additionally, a police lieutenant detective is housed in this office and available by pager, to help with quality control as needed. Two Alcohol, Tobacco and Firearms (ATF)

officers are also housed in the office and respond to significant fires as requested. Boston fire also has a dedicated chemist who responds to fire scenes when the use of accelerants is suspected. Four dedicated photographers with video capability also respond from the arson unit although their pictures and videos are also used for training. Boston's Fire Investigation model produces quantifiable benefits by boasting a conviction rate twice the national average.

Selection

The methods of selection of fire investigators were similar in most cases. Frequently candidates were required to have attained first-level supervisor rank, either captain or lieutenant. The most common methods for candidate selection included an interview, as well as, an evaluation of work history via resume, personnel file review and reputation. The critical qualifications being considered included education, demonstration of initiative, work ethic, demonstrated commitment to the organization above the norm (i.e. work on committees, volunteer hours etc.) and prior police experience. At least half of the departments contacted required some sort of written test, varying from multiple choice to technical report writing. Almost all departments required the successful completion of the hiring process for police officers, including background checks, references, psychological examination and frequently some sort of physical agility test. The next hurdle for the candidates was the completion of the police academy, usually representing five to six hundred hours of training.

One of the most complete selection processes was developed and employed by the Austin Fire Department (Texas). In addition to all the components listed above, Austin requires copies of two incident reports (or equivalent) recently written by each candidate

for evaluation of writing skills. The next step in the process is a role play exercise, in which the candidate interviews a fire investigator pretending to be a homeowner who has had a fire. This role-play is videotaped for further review of the candidate's ability to establish rapport and interview a customer. The candidate then must type a report of the interview for evaluation. The last unique component of this selection process is an observation exercise. The candidate is given an hour observing and documenting the placement of approximately 12 items arranged on a table. Some of the items are common and some unusual. They are given a pad of paper and graph paper. The candidate is then required to type a report from their notes and drawings of what they observed. This measures the candidate's ability to observe, document and report within a specified time period.

Two of the investigation units contacted primarily used a seniority system for selecting fire investigators. While all the managers who offered their opinions about the use of seniority favored other methods, one of the managers said something positive about the seniority system. He said that it's fairer than the previous system used in his department, the "buddy system". He went on to describe the "buddy system" as the boss hiring all his buddies. One manager stated,

I'm very pro-union, and in fact, I'm currently in the union. However, picking fire investigators by seniority is going to be the undoing of the arson squad. By the time the guy has enough seniority to gain the position, say 20-plus years, what does he have left? You need guys that are self-motivated, willing to study and learn on their own. You need the pick of the litter, the best and the brightest, guys

who have demonstrated commitment to the department, desire to learn, and initiative. The most senior guys are coasting into retirement.

Training

Most of the fire investigation units contacted were required by their state fire marshal's office to go through the state's Cause and Origin course, in order to become certified fire investigator. These courses are based on NFPA 1033 standard, and usually last for 110 hours. One of the investigation managers from Texas related that the state firefighters' union had been instrumental in passing the legislation that requires and provides training (to the NFPA 1003 standard) to every fire investigator in the state.

Some departments maintain a reserve of trained investigators who serve in operations and only come in periodically to the investigation division for training and to maintain their skills. When a position in the unit becomes vacant, one these field investigators is brought into the unit. They are selected based on their proven abilities in fire investigation. Other departments pair a newly certified investigator with an experienced investigator for mentoring until the mentor and the manager agree the new investigator is ready to operate alone. Some departments also require investigators to complete a fire code academy prior to being certified.

Seminars in fire investigations provide continuing education for investigators across the nation. Frequently, attendance is voluntary, sometimes mandatory. Many managers try to send their investigators to the arson, interviewing, and courtroom techniques courses at the National Fire Academy, the FBI Academy, and the ATF Academy at the Federal Law Enforcement Training Center. In some cases, the federal or

state government pays part or all of the cost of this training. Local and state colleges, in some states offer courses of value to investigators.

Research Question 2.

How should the selection process for fire investigators be designed?

According to the literature reviewed for this research, the selection process should be based on national standards and a job analysis, in order to support the highest level of customer service. The selection process developed by the Austin, Texas Fire Investigation Unit appears to be based on a job analysis and the NFPA 1033 standard. A selection process more tailored to the position in the Phoenix Fire Investigation Unit might be designed by analyzing the job and brainstorming with experienced investigators. Developing such a test would require some time and effort for development and administration. If there were not enough time to develop such a thorough examination, at least an interview and a review of resumes and personnel files would, according to the investigation managers, be more appropriate than simply abdicating to the use of seniority. There are three possible drawbacks to this simplified test. One is the possibility that the selection process would degrade over time into the “buddy system”. Two, it may already appear to be the “buddy system” to those who are not selected, unless the criteria for selection were quantified and advertised. Three, the simplified process has no means to measure some of the skills required of an investigator, such as report writing, interrogation, and observation skills. Although, according to the fire investigation managers, who were consulted, any method of selection other than seniority and the “buddy system” will enhance customer service.

Research Question 3.

What is the ideal organizational structure to support the highest level of service by fire investigators?

All of the fire investigation managers agreed that a task force is by far the best approach to fire investigations. Having police officers assigned to the investigation unit, who routinely respond to working fires was the preferred structure. This allows police to interview, interrogate, fingerprint and arrest while the fire investigator focuses on cause and origin. NFPA 921 also recommends “a minimum of two individuals should be present to ensure that assistance is at hand if an investigator should become trapped or injured” (pp. 921-70,71).

Support, such as a dedicated district attorney available by pager is very helpful. The Maricopa County Attorney’s Office created a position for a prosecutor specializing in arson cases over five years ago, at the urging of the Phoenix Department. ATF officers housed in fire administration would be helpful. A dedicated chemist and four videographers would likely prove to be of considerable value in catching arsonists. Does it really make sense to have firefighters struggling alone to prove arson, arrest and prosecute the “most expensive, fastest growing” (O’Connor) and “hardest to prove” (Chief Rice, Boston Fire) crime in America?

Research Question 4.

What are the options to provide initial and continuing training and education to meet national standards for fire investigators?

Due to current and projected overcrowding at the Phoenix Regional Police Academy, the Phoenix Fire Investigation Division must arrange peace officer training and certification through another provider. There are currently three options for

obtaining this training. First, Yavapai College in the Prescott area provides peace officer certification for Arizona Department of Transportation. We could arrange to place investigation candidates into those courses that are already scheduled at a minimum expense. Secondly, Mesa Community College has expressed a willingness to design and provide this training if there was a minimum of fifteen students. Recent telephone interviews with fire investigation managers in the Phoenix Metropolitan area determined that there is enough demand to justify this curriculum development. Lastly, it is possible for the Phoenix Fire Department to become a certifying academy for peace officer training. Becoming a certifying agency would require a significant commitment of resources.

Other initial training should include training and certification in cause and origin of fires (NFPA 1033) and investigation of fires and explosions (NFPA 921). The ideal approach would be for the Arizona State Fire Marshal's Office to become funded to the point that they could require and provide training and certification to these national standards. Another option is to arrange for one of the colleges in the area, which has expressed an interest in working with public service agencies, to design and offer such training. A third option is to contact private instructors, bring them to the area and make such training available to fire investigators in the community. The tuition from investigators from other departments would help subsidize the cost of bringing the trainer to the Valley. More investigators could receive the training and cost would be kept down because there would be no need for airfare or hotel reimbursement of each investigator. Minimal effort to arrange this type of training would be required.

DISCUSSION

No similar studies were located in the literature review. This author was unable to locate any published studies concerning the ideal structuring of a fire investigation unit, the best selection method of fire investigators or the ideal training regimen. An unpublished study by Dana Patrick, a graduate student at Oklahoma State University, found a conclusive relationship between the budget for fire investigations upon the number of arson arrests in the area being served. This finding was repeatedly confirmed by the experience of fire investigation managers in the interviews of this study.

Structure

Neither the literature review nor the consultations with investigation managers revealed any negative aspects of the task force concept for fire investigations. However, two obvious obstacles may prevent the task force from becoming a reality in the Phoenix Fire Investigation Division. The first obstacle is that of budgetary constraint and may prove an insurmountable obstacle to assigning police officers to fire investigations. Phoenix Police are currently shorthanded and unless police leadership realizes the need, the potential benefit to the community, and buy into the vision, a task force is not likely. The second obstacle is the required political support necessary from Police and Fire management to dedicate resources to fire investigations.

Even if it were not possible to have police officers respond with fire investigators to each working fire, it would be extremely helpful to have police support similar to Seattle or Philadelphia fire investigation units. These cities have a police lieutenant on staff to oversee fire investigation paperwork and procedures. The lieutenant critiques reports and returns inappropriate documentation to fire investigators for correction and

completion. A police detective is also on staff, responding to fires, and available by pager twenty-four hours a day. He mentors the investigators in police duties on the scene, such as interviewing, interrogation and courtroom presentation skills. This not only improves the level of service to the external customer; it also assists the internal customer (the investigator) in learning to be successful in all aspects of the job.

Chief Rice, of the Boston Fire Investigation Unit, shared additional information that may be of interest to the reader. He stated that for years, Boston did not have the manpower to investigate vehicle fires, unless there was a witness willing to testify. Citizens of the surrounding communities routinely drove their cars to Boston to “sell them back to the insurance company” and took a cab home. Four thousand vehicle fires a year occurred in Boston. Eventually, legislation was passed that required anyone who had a car fire in Boston to take all of their information about the vehicle (insurance, payment book, title, records of maintenance) to the Boston Fire Investigation Unit to fill out several forms. These forms were required to be completed, prior to reimbursement from the insurance company. Two investigators were assigned the responsibility of managing these vehicle fire reports. Chief Rice related that when questioned about the vehicle with all of the documentation, it was surprising how many vehicle owners admitted to burning their cars. Over a five-year period, the annual rate of vehicle fires in Boston dropped from four thousand to seven hundred and fifty a year, an eighty one percent reduction in vehicle fires.

Selection

The selection process must be based on the job analysis and be designed to measure the knowledge, skills and abilities necessary to complete the duties of the

position of fire investigator. This will not only serve to improve the level of customer service provided by the fire investigators, but it is the fulfillment of management's responsibility. Several suggestions from other departments are listed in the section above.

Training

The most likely way to institute a statewide training and certification program for fire investigators would be for the state firefighter's union to move legislation through the legislature; similar to the way it passed in Texas. It is unknown if the state firefighter's union is in a position, or even inclined to move in this direction. This seems to be a desirable direction, with statewide benefits.

All of the managers who were contacted sent their investigators to other agencies for certification. In each case, a police agency ran the academy for peace officer certification. In Phoenix, the concept of becoming a certifying academy for peace officer is currently being discussed and considered. In light of the current shortage of technical (police) support, the lack of available training in fire cause and origin, placing the necessary amount of resources into becoming a certifying academy for peace officer seems ill advised. Peace officer certification is available from at least two other sources, at a reasonable cost.

Regarding the need for initial and continuing training in a variety of fire investigation areas, several local universities and colleges have recently begun to compete to provide educational services to public safety organizations. The competition among the community colleges for the student of fire services has heated up tremendously within the last few years, with Mesa Community moving in as the most

aggressive lead provider. Ottawa University recently began a Fire Service Management Bachelor degree program. Arizona State University has begun a Bachelor degree program in applied science with an emphasis in fire and police management. Another educational institution in Arizona, Grand Canyon University began a Bachelor degree program in Public Safety Management, which applies to both fire and police. Any of these institutions would likely be very responsive to the suggestion of providing training to the national standards for fire investigation.

RECOMMENDATIONS

Structure

In light of the consensus of fire investigation managers regarding the effectiveness of a task force to deliver quality fire investigations to the customer, a task force should be formed. Initially, a pilot program is recommended to identify and remove any barriers preventing the highest level of customer service. Support for this concept must be solicited from labor and management of both fire and police. One selling point that should be included is the 154 million-dollar loss to the community caused by arson in 1998. What other crime has such a financially devastating impact on the community? At the very least, a sergeant to help with written reports and a detective to mentor the investigators regarding police skills in the field would be of tremendous value.

Additionally, the number of fire investigators on duty needs to be evaluated. When compared to similar and smaller cities in population and square miles, the Phoenix Fire Investigation unit appears considerably understaffed. For example, Dallas Fire

Investigation serves a population of slightly over a million spread over 342 square miles. Nineteen investigators serve the Dallas population compared to eight for Phoenix. Austin Fire Investigation has ten investigators serving a population of almost 600,000, spread over 230 square miles. And Boston Fire Investigation has twenty-eight investigators serving a population of 574,000, concentrated in only 47 square miles. Appropriate levels of staffing and support are critical to delivering the “highest level of customer service”. A minimum of six investigator positions should be added as soon as possible. Six new positions would not truly address the need, but it would be a step in the right direction.

Another structural recommendation is to have twenty-four hour access to a certified Spanish language interpreter, due to the inability of investigators to perform their craft with a language barrier. Currently Phoenix has a Hispanic population of 56,135 residents who have indicated that they do not speak English well (memo from City Personnel, March 10, 1999). An interpreter is an integral component of delivering quality customer service in the area of fire investigation to this growing population,

Another area where the Phoenix Fire Investigation section is understaffed is secretarial support. Another secretary is desperately needed due to the backlog of reports to be typed. At least one of the Secretary II positions should be upgraded, due to the workload and level of responsibility. During the last five and a half years, six secretaries have left for promotion to Secretary III or to escape the excessive workload. After a new secretary is hired, it takes a few weeks to learn the system well enough to function productively. During this time, investigation reports continue to accumulate, increasing the level of frustration and diminishing the level of service provided to the customer.

Vehicles for fire investigators are currently another critical need. During the nighttime hours, when the majority of fires occur, only two investigators are on duty to respond for the almost five hundred square miles of Phoenix. Frequently, investigators are called upon to respond from their homes to investigate fires when the on duty investigators are working other fire scenes. Because investigators are not assigned cars to take home, they must drive to the office in order to respond in an appropriately equipped vehicle. The drive to the office to get the car frequently adds another hour to hour and a half to the response time. This frustrates on scene fire crews and frequently results in premature overhaul of the fire scene, thereby destroying critical evidence. Additionally, valuable witnesses leave the scene during this extended response time. Fire companies must remain out of service on scene and are therefore unable to deliver service to other customers. Firefighters must remain on scene to preserve the chain of evidence. This causes other fire crews to respond out of their first due area to answer additional emergency requests. The end result of not having assigned vehicles for fire investigators is a diminished level of service for both the internal and external customers.

Selection

It is clear from the literature and the investigation managers consulted that a test based on a job analysis and national standards is needed. It must objectively quantify the specific knowledge, skills and abilities required to successfully complete the duties of fire investigator. The necessary skills include, report writing, courtroom presentation, interviewing, interrogation and observation. The next step is to begin the process by meeting with Personnel, Labor and Management to discuss and plan for the design and implementation of the process.

A possible complication of the selection process is that the police academy no longer provides peace officer training due to overcrowding. Part of admission to fire investigation was successfully completing the police academy. The fire investigation managers who were consulted advised that the thorough background check, the psychological screening and the physical agility components of the test were of significant value in the selection process. These should be considered because they are no longer provided by police and have been determined to be of value.

The ability to converse, interview and interrogate in Spanish is very desirable and, at times critical, as such it should be given weight in the selection process. The Phoenix Police Department uses a fluency test, which could, no doubt be used to determine fluency. Fluency in other languages should also be valued in the selection process, although none is as critical as Spanish according the fire investigators.

Training

Prior to beginning a long list of recommendations for training, it seems appropriate to mention the probable need to increase the training budget. This should enable the Department to more fully and appropriately support the fire investigators. One of the most critical needs regarding the training of fire investigators is the need for a training coordinator. This would be a new position, which could also be responsible for other duties, such as quality control or mentoring. This position would require considerable experience in the field of fire investigation and should be compensated appropriately. Currently, when a fire investigator transfers from shift work to days, he reportedly loses approximately \$5,000 annually. An experienced and knowledgeable fire

investigator is in demand, and should be paid for the knowledge, skills and abilities necessary to complete the assigned duties.

The next recommendation is for the State Fire Marshal's office to take a similar role to that of California and Texas by requiring all fire investigators to be trained to the NFPA standards of 1033 and 921. It would be ideal if the state also provided such standardized training. It is possible that the state Firefighter's Union would be interested in encouraging such legislation. The benefits in terms of enhancing the customer service statewide that it delivered by fire investigators would be tremendous. The next step is to approach the union to discuss the concept.

Another option to provide critical training for fire investigators is cooperation with local colleges and universities. This may be the most easily accomplished option. The next step is to contact Ed Kaplan of the National Fire Academy. Surely this proponent of education for the fire service is aware of already prepared lesson plans for these standards, which will facilitate their implementation locally.

The need to provide peace officer training and certification for new fire investigators is must be addressed. The best option for obtaining this critical certification is to arrange for Mesa Community College to develop and provide the course. In the event that it becomes critical to train investigator candidates prior to course development, the candidates should be sent to Yavapai College for peace officer training in the interim.

Vehicle fires

Vehicle fires are not currently investigated in the City Phoenix, unless there is a witness and a suspect. The reason is very simple; the fire investigation unit is severely understaffed and unable to respond to vehicle fires. In 1998, there were 2709 dispatched

calls for vehicle fires in Phoenix (Telephone interview with Ron Burch, 7-20-99). This amounts to a huge loss, which is borne by everyone who pays insurance.

The insurance companies should join with the firefighters and lobby for legislation similar to that passed in Boston which requires anyone whose car has been burned to fill out forms in order to collect insurance. Boston reports an incredible 3250 vehicle fire decrease, which amounts to 81%, due to that program over a 5 year period. This program was manned with only two fire investigators. That is the highest level of customer service to be delivered by fire investigators.

Trust Fund and Federal Grants

A Fire Investigation Trust Fund should be established to provide opportunity for insurance companies and other concerned private parties to donate funds to be used by the Fire Investigation Section. These funds could be used for training, equipment, vehicles and other needs which current budget level does not satisfy.

Federal grants are reportedly available to fund positions, provide equipment and training for which fire investigation could qualify. The first step is to hire or designate a qualified individual to research and apply for these monies. These funds would be very useful in meeting the needs of the fire investigators until the budget could be adjusted to adequately finance the unit.

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